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THE PLANT DISEASE REPORTER

Issued By

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXV Number 15

August 15, 1941

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

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Check list revision, by Freeman Weiss, page 392.

Thomas R. Bender describes fusarium die-back of American holly, a new disease observed in New Jersey, page 403.

Donald Cation reports the discovery of yellow-red virosis of peach and choke-cherry in Michigan, page 406.

What seems to be the first observation of Rosellinia root rot on alfalfa in this country is reported by M. R. Harris from California, page 407.

Given favorable weather, potato late blight will cause severe damage in upstate New York unless the fields are protected, according to M. F. Barrus, page 408.

Some unusual plant disease occurrences reported more briefly, page 408, include the finding of Heterodera schachtii in a Long Island potato field, reported by Orson S. Cannon; the appearance and spread of peach yellows in northern Virginia orchards, by A. B. Groves; scab on prunes in California, by M. R. Harris; and a fusarium wilt of the mimosa tree in eastern Virginia, by T. J. Nugent.

July weather, page 409.

CHECK LIST REVISION

Freeman Weiss

MALVASTRUM (MALVACEAE)

MALVASTRUM COCCINEUM (Pursh) A. Gray, RED FALSEMALLOW. Perennial herb of Western Plains, sometimes grown for ornament.

Puccinia schedonnardi Kell. & Swingle, rust (0,I). Mont. and N.Dak. to N. Mex. (II and III on various wild grasses.)
P. sherardiana Körn., rust (0,III). Mont. and N. Dak. to Texas and N. Mex.

MALVASTRUM FASCICULATUM (Nutt.) Greene, BUSHMALLOW. Large shrub of Growth Regions 5 and 10 sometimes grown for ornament.

Puccinia interveniens (Pk.) Bethel, rust (0,I). Calif.(III on Stipa sp.)
P. schedonnardi Kell. & Swingle, rust (0,I). Calif.
P. sherardiana Körn., rust (0,III). Calif.

MALVASTRUM spp.

Cercospora micranthae Müller and Chupp, leaf spot. P.R.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas
Puccinia heterospora Berk.& Curt., rust (III). Texas
P. malvacearum Mont., rust (III). Reported in U.S. several times but possibly confused with preceding sp.; authentically reported on tropical Malvastrum spp. in West Indies.

MALVAVISCUS (MALVACEAE)

MALVAVISCUS spp. Trees or shrubs of tropical America, grown for ornament in the far South. M. DRUMMONDII Torr. & Gray, bearing edible fruit, occurs in Fla. and Texas.

Clitocybe tabescens (Scop.ex Fr.) Bres., root rot. Fla.
Helicobasidium purpureum (Tul.) Pat. (Rhizoctonia crocorum [Pers.] DC.), collar rot. Texas
Kuehneola malvicola (Speg.) Arth., rust (II,III). Texas
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas
(M.grandiflorus ["M. conzattii"] is resistant.)
Puccinia heterospora Berk. & Curt.; rust (III). Texas
Sclerotinia sclerotiorum (Lib.) D By., twig blight. Texas

MAMMEA (GUTTIFERAE)

MAMMEA AMERICANA L., MAMEY. Tree of tropical America bearing edible fruit

Aulographum melioloides Cke. & Mass., black mildew. P.R.
Cephaleuros virescens Kze., green scurf. P.R.
Echidnodes mammeae Ryan, on leaves. P.R.
Meliola paulliniae F.L.Stevens, black mildew. P.R.

MANGIFERA (ANACARDIACEAE)

MANGIFERA INDICA L., MANGO. Evergreen tree of S.E. Asia, cult. in tropical America, including S.Fla., Calif., Texas, and Hawaii, for edible fruit.

Aleurodiscus candidus (Schw.) Burt, on bark. P.R.
Aspergillus niger van Tiegh., tuber rot. Calif.
Botryosphaeria ribis var. chromogena Shear et al., on branches. T.H.
Capnodium spp., sooty mold. General
Cephaleuros virescens Kze., green scurf. General.
(Colletotrichum gloeosporioides Penz.): Glomerella cingulata.
Diplodia theobromae (Pat.) Nowell (D. cacaolicola Henn., D. natalensis Pole-Evans), tuber rot and twig blight. Calif., Fla. (Conidial stage of Physalospora rhodina.)
(Dothiorella sp. and D. mangiferae Syd.): ? conidial stage of Botryosphaeria ribis.
Gloeosporium sp., flower blight, fruit rot. Fla., P.R., T.H. (? Conidial stage of following)
Glomerella cingulata (Ston.) Spauld. & Schrenk. anthracnose, flower and twig blight, fruit rot. General.
Loohodermium mangiferae Koord., on leaves. P.R.
Meliola mangiferae Earle, black mildew. T.H., West Indies.
Omphalia flavida (Cke.) Maubl. & Rang., leaf spot. P.R.
Pestalotia virgulata Klebahn, on leaves. P.R.
Phaeosphaerella mangiferae Stevens & Wesdon, leaf spot. T.H.
Phomopsis sp., twig blight. Fla.
Phyllosticta mortoni Fairm., leaf spot. Fla., Texas.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas
Physalospora rhodina (Berk. & Curt.) Cke., on branches. Fla.
Phytomonas tumefaciens EFS. & Town., crown gall.
Polyporus spp., wood rot. (Spp. reported include P. arcularius Batsch. ex Fr., Fla.; P. gilvus Fr., T.H.; P. pinsitus Fr., Fla.; P. sanguineus L. ex Fr.)
Septobasidium pilosum Boed. & Stein. and S. pseudopedicellatum Burt, on scale insects on bark and leaves. Fla.
Septoria sp., leaf spot. Fla., P.R.
Stereum albobadium (Schw.) Fr., wood rot. Fla.
Trametes corrugata Pers. ex Brès., wood rot. T.H.
T. hydnoides (Sw.) Fr., Fla.
Little leaf--zinc deficiency. Fla.

MANIHOT (EUPHORBIACEAE)

MANIHOT CARTHAGINENSIS (Jacq.) Muell. Shrub or small tree of Texas to S. Calif. and southward.

Ascochyta carthaginensis Sacc., on twigs. S.Car.
Colletotrichum janiphae Grove, on stems. S.Car.
Dothiorella botrya Sacc., on branches. S.Car. (? conidial stage of Botryosphaeria ribis.)
Uromyces carthagenensis Speg., rust (I,III). West Indies

MANIHOT ESCULENTA Crantz, CASSAVA, MANIOC. Shrub of Brazil bearing tuberous edible roots; widely cult. as a food plant in tropical countries; introduced into S.Fla.

(Cercospora caribaea Cif.): Ragnhildiana manihotis.
C. henningsii Allesch. (C. cassava Ell.& Ev.), leaf spot. Canal Zone, Fla., P.R., Texas
Colletotrichum manihotis P.Henn., leaf spot. West Indies
Diplodia theobromae (Pat.) Nowell (D.cacaolicola P.Henn.) on branches. Occasional. (Conidial stage of Physalospora rhodina.)
Fusarium sp., tuber rot. P.R.
Gloeosporium sp. and G. manihotis P.Henn., withertip. Fla. to Texas, P.R., T. H. (Probably conidial stage of Glomerella cingulata.)
Heterodera marioni (Cornu) Goodey, root knot. Fla.
Microsphaera diffusa Cke. & Pk. and M. euphorbiae (Pk.) Berk. & Curt., powdery mildew. P.R. (Only conidial stage in P.R.)
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas
Physalospora fusca N.E. Stevens and P. rhodina (Berk. & Curt.) Cke., on branches. Fla.
Phytomonas tumefaciens EFS. & Town., crowngall
Phytophthora parasitica Dastur, root rot. P.R.
Ragnhildiana manihotis Stevens & Solheim, leaf spot. Canal Zone, P.R.
Rhizoctonia solani Kühn, root rot. Fla.
Rosellinia bunodes (Berk. & Br.) Sacc. and R. pepo Pat., root rot. West Indies
Uromyces janiphae (Wint.) Arth., rust (0,I,II,III). P.R.
Tryblidiella rufula (Spreng.) Sacc., on twigs. Fla.

MANIHOT spp.

Uromyces manihoticola P.Henn., rust (III). P.R.
U. manihotis-catingae, rust (II,III), West Indies

MAYTENUS (CELASTRACEAE)

MAYTENUS spp. Evergreen shrubs or trees of tropical America, grown for ornament.

Scolecopeltis chardonii Toro, black leaf spot. P.R.

MELASTOMA (MELASTOMACEAE)

MELASTOMA sp. Tropical shrubs grown under glass, or in open in warm regions, for ornament.

Asterina correacola Cke. & Mass. and A. transiens Theiss., black leaf spot. P.R.
Asterinella melastomacearum Ryan, black leaf spot. P.R.
Morenoella melastomacearum Ryan, black leaf spot. P.R.

MELIA (MELIACEAE)

MELIA AZEDARACH L., CHINABERRY. CHINA-TREE. Tree of S. Asia., now naturalized in tropical America and the Southern States from N.Car. to Texas. A var. UMBRACULIFORMIS Berckmans (umbraculifera Hort.) TEXAS UMBRELLA TREE, is distinguished.

Botryodiplodia meliae Ell. & Ev., on branches. La. (? conidial stage of Physalospera rhodina.)
Botryosphaeria ribis (Tode ex Fr.) Gross. & Dug., on branches. Ala., Fla., S.Car.
Cercospora leucosticta Ell. & Ev., leaf spot. Gulf States. P.R.
C. meliae Ell. & Ev., Gulf States.
Corticium koleroga (Cke.) Höhn., limb blight. Fla.
Diplodia langloisii Sacc. & Syd., on branches. La. (? conidial stage of Physalospora rhodina.)
Fomes meliae (Underw.) Murr., wood rot. Ala.
Fusarium lateritium Nees, on twigs. S.Car., Texas
F. sarcochroum (Desm.) Sacc., on berries. Ala., La.
Glomerella cingulata (Ston.) Spauld. & Schrenk, On twigs & berries. La.
Helicobasidium purpureum (Tul.) Pat. (Rhizoctonia crocorum [Pers.] D.C.) root rot. Texas
Heterodera marioni (Cornu) Goodey, root knot.
Macrophoma sp. and M. subconica Ell. & Ev., on branches. Ala., Texas
Nectria cinnabarina Tode ex Fr. (N.meliae Earle), on twigs. Calif., Gulf States, S. Car.
N. coccinea Pers. ex Fr., canker. Miss., S. Car.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Texas
Phyllactinia corylea Pers. ex Karst., powdery mildew. Miss.
Phyllosticta azedarachis Thüm., leaf spot. Ala.
P. meliae Ell. & Ev., La.
Phymatotrichum omnivorum (Shear) Dug., root rot, Ariz., Texas.
Physalospora fusca N.E. Stevens, on branches. Ga.
P. obtusa (Schw.) Cke., on branches. Ala., Fla., Ga.
P. rhodina (Berk. & Curt.) Cke., Ga.
Polyporus pavonius Hook., wood rot. P.R.
P. versicolor L. ex Fr., Ga.
Pseudoperonospora portoricensis (Lamkey) Seaver & Chardon, downy mildew. P.R.

MELICOCCA (SAPINDACEAE)

MELICOCCA BIJUGA L., MAMONCILLO. Tree of tropical America grown for edible fruit and ornament.

Meliola sapindacearum Speg., black mildew. Canal Zone, P.R.

MENISPERMUM (MENISPERMACEAE)

MENISPERMUM spp., MOONSEED. Twining vines sometimes grown for ornament, Zone IV. M. CANADENSE L. is endemic in the Eastern and Central States; M. DAURICUM DC. is a native of E. Asia

Cercospora menispermi Ell. & Holw., leaf spot. N.Y. to Va., Kans. and Wis.
Colletotrichum sordidum Davis, leaf spot. Wis.
Diaporthe beckhausii Nit. (D. menispermi Dearn. & House), on stems. N.Y.
Diplodia sarmentorum Fr., on dead stems. N.Y.
Entyloma menispermi Farl. & Trel., leaf smut. Pa. to Va., Kans. and N. Dak.
Microsphaera alni DC. ex Wint., powdery mildew. Widespread.
Phomopsis menispermi (Pk.) Grove, on stems. Kans., Ky.
Phyllosticta menispermicola Tehon & Daniels, leaf spot. Ill.
(Ramularia contexta Ell. & Ev.): Entyloma menispermi
Septoria abortiva (Ell. & Kell.) Tehon & Daniels, leaf spot. Ill., Kans.
Sphaeropsis menispermi Pk., on stems. Widespread.
(?conidial stage of Physalospora obtusa.)
Valsa menispermi Ell. & Holw., on stems. Iowa.

MENZIESIA (ERICACEAE)

MENZIESIA FERRUGINEA Sm. (including M. GLABELLA Gray), rusty-leaf. Deciduous shrub of Growth Regions 1, 4, 12, 23.

Exobasidium vaccinii (Fckl.) Wor., leaf gall. Alaska, Pacific Northwest.
Melasmia menziesii Dearn. & Barth., tar spot. Mont. to Oreg. and Wash., Alaska
Microsphaera alni var. vaccinii (Schw.) Salm., powdery mildew. Alaska.
Rhytisma sp., tar spot. Several collections of tar leaf spot on this host have been referred doubtfully to R. arbuti Phil. or to R. dendriticum Pk., a nom. nud.; all appear to have only the Melasmia stage and are probably M. menziesii

MENZIESIA PILOSA (Michx.) Pers., MINNIE-BUSH. Deciduous shrub of Growth Region 27; cult. for ornament, Zone V.

Dermatea sp., on stems. Va.
Exobasidium vaccinii (Fckl.) Wor., leaf gall. Va., N. Car., W. Va.
Pucciniastrum myrtilli (Schum.) Arth., rust (II,III) W. Va.
(0 and I on Tsuga canadensis.)

MESPILUS (ROSACEAE)

MESPILUS GERMANICA L., MEDLAR. Shrub or small tree of S.E. Europe, long cult. for its edible fruit; Zone V. Several vars. are distinguished.

Erwinia amylovora (Burr.) Winslow, fire blight. N.Y.
Fabraea maculata Atk., leaf spot. Calif.

METROSIDEROS (MYRTACEAE)

METROSIDEROS spp. Shrubs or trees of Australia and S. Pacific Is., grown for ornament.

Amazonia ohianus F. L. Stevens, black mildew. T. H.
Asterina rickii Theiss., black leaf patch. T. H.
Meliolina haplochaeta Syd. and M. sydowiana F. L. Stevens, black mildew. T. H.
Metasphaeria hawaiiensis Stevens & Young, leaf spot. T. H.
Mycosphaerella metrosideri Stevens & Young, leaf spot. T. H.
Polyporus arcularius Batsch. ex Fr., wood rot. T. H.

MICONIA (MELASTOMACEAE)

MICONIA spp. Shrubs or trees of tropical America widely cult. as ornamentals, also under glass in the U.S.

Arneomyces miconiae (Stevens) Toro, on leaves. P. R.
Asterina spp., black leaf patch. P. R. (Numerous spp. included, as A. belluciae P. Henn., A. camelliae Syd. & Butl., A. carbonacea Cke. and var. anacardii Ryan, A. chrysophylli P. Henn., A. coreacola Cke. & Mass., A. melastomatis (Lév.) Arnaud, A. spathulata (Ryan) Seaver & Chardon, A. theisseniae Ryan, A. transiens Theiss.)

Aulographum culmigerum Ell., black leaf spot. P.R.
Blastotrichum miconiae F. L. Stevens, leaf spot. P.R.
Cephaleuros virescens Kze., green scurf. P.R.
Dothidina peribebuyensis (Speg.) Chardon, on leaves. Canal Zone, P.R.
Echidnodella miconiae Ryan, on leaves. P.R.
Hyalosphaeria miconiae F. L. Stevens, on leaves. P.R.
Ireno melastomacearum (Speg.) Toro, black mildew, P. R.
Irenopsis miconiae F. L. Stevens and I. miconiacicola F.L. Stevens, black mildew. P.R.
Lembosia diffusa Wint., L. melastomatum Mont., and L. sclerolobii P. Henn., on leaves. P. R.

MICONIA--Continued

Microclava miconiae F. L. Stevens, on leaves. P. R.
Morenoella spp., black leaf patch. P.R. (spp. reported include M. dothideoides (Ell. & Ev.) Höhn. and var. impeticlaris Ryan, M. gigantea Ryan, M. miconiae Ryan, M. miconicola Ryan, and M. pothodei var. laevigata Ryan.
Rosellinia bunodes (Berk. & Br.) Sacc., root rot. P.R.
Septoria miconiae Garman, leaf spot. P. R.

MICROCITRUS (RUTACEAE)

MICROCITRUS VIRGATA Swingle. Small evergreen tree of Australia introduced into U. S. for testing as citrus stock.
Tylenchulus semi-penetrans Cobb, in roots. Md.

MIMOSA (LEGUMINOSAE)

MIMOSA spp. Shrubs, trees, and some herbs mostly of tropical America, but several spp. endemic in S.W. U.S.; sometimes grown for ornament. Plants of other leguminous genera as Acacia and Albizzia (q.v.) also appear in horticultural trade under this name.

Cylindrosporium sp., leaf spot. Texas
Meliola bicornis Wint. and denticulata Wint., black mildew. P.R.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Ramularia mimosae Stevens & Dalby, leaf spot. P.R.
R. dysocarpae Long & Goodding, rust (III). Ariz.
Ravenelia caesalpiniae Arth., rust (III). P. R., Virgin Is.
R. fragrans Long, rust (II,III). Ariz., Texas
Mosaic, ? virus. T. H. (On M. pudica L.)

MIMULUS (SCROPHULARIACEAE)

MIMULUS spp. Ann. or per. herbs and small evergreen shrubs, mostly endemic in western N. America; several spp. cult. as garden ornamentals and especially M.LUTEUS L., of Chile, also cult. under glass.
Botrytis cinerea Pers., gray mold blight. Alaska.
Cercospora mimuli Ell. & Ev., leaf spot. Mo.
Erysiphe cichoracearum DC., powdery mildew. Widespread.
Melanomma dothideasporum (Cke. & Harkn.) Cke., on stems. Calif.
Metasphaeria anisometra (Cke.& Harkn.) Sacc., on dead stems. Calif.
Puccinia andropogonis f. penstemonis Schw., rust (0, I). Mo., Wis. (II and III on Andropogon sp.)
Ramularia mimuli Ell. & Kell., leaf spot. Widespread.
Septoria mimuli Ell. & Kell., leaf spot. Pa. to Miss., Kans. and N.Dak.
Rhabdospora kellermani Ell. & Mart., on leaves. Ohio.
Uredo sp., rust (II). Wis.

MONSTERA (ARACEAE)

MONSTERA DELICIOSA Liebm., CERIMAN. Woody-stemmed climber of tropical America, grown in open in warm regions, and under glass, for ornament.

Macrophoma philodendri Pk. and var. maculicola Pk., leaf spot. Fla., Mich.

MONTEZUMA (MALVACEAE)

MONTEZUMA SPECIOSISSIMA Moc. & Sessé. Tree of P. R., grown for ornament.

Cerotelium desmium (Berk. & Br.) Arth., rust (II,III). P.R.

MORUS (MORACEAE)

MORUS ALBA L., WHITE MULBERRY. Deciduous tree of China, long cult. for fruit and for ornament and known in several vars. as MULTICAULIS (Perrot.) Loud., PENDULA Dipp. and TATARICA (L.) Ser., RUSSIAN MULBERRY;Zone IV and V, also naturalized in Growth Regions 17,20,22,25,27,28,29.

Armillaria mellea Vahl ex Fr., root rot. Del., N.Car., Okla.
Botryosphaeria ribis Gross. & Dug., on branches. Ga., N.J.
Cercospora moricola Cke., leaf spot. Pa. to Fla.,Texas and Nebr.
Cercosporella mori Pk., leaf spot. Nebr., Okla., Texas.
(C. maculans (Bereng.) Wolf) : Mycosphaerella mori
Cytospora sp., twig canker. N.J., Texas.
Dendrophoma longipes (Berk. & Curt.) Grove, on branches. Kans., Mass., N.Y.
Dermatea mori Pk., on dead branches. Kans.
Dothiorella sp. and D. mori Berl., canker, twig blight. N.J., Texas. (? conidial stage of Botryosphaeria ribis.)
Fusarium lateritium Nees var. mori Desm., canker, twig blight. Widespread. Conidial stage of Gibberella baccata (Wallr.) Sacc., var. moricola (DeNot.) Wr.
Helicobasidium purpureum (Tul.) Pat. (Rhizoctonia crocorum), root rot. Texas.
Heterodera marioni (Cornu) Goodey, root knot. N.J., N.Car., Okla.
Massaria epileuca Berk. & Curt., on branches. Ind., N.J., Pa.
M. olivacea Cke., Md., Pa.
Mycosphaerella mori (Fckl.) Lindau, leaf spot. Widespread.
(The conidial stage has been variously designated as Cercosporella maculans (Bereng.) Wolf, Cylindrosporium mori Berl., Phleospora maculans (Bereng.) Allesch. and P. mori (Lév.) Sacc., Septogloeum mori (Lév.) Briosi & Cav., Septoria mori Lév. This combination by Lindau (1908) antedates that by Wolf (1935) as used in the U.S.)

MORUS--Continued

Myxosporium diedickei Syd., twig blight. Texas, Wash.
Nectria sp. (? N. coccinea Pers. ex Fr.), canker. Widespread.
N. cinnabarina Tode ex Fr., ? canker, ? twig blight. Widespread.
N. verrucosa (Schw.) Sacc., on branches. N.J., Pa., S.Car.
(Phleospora maculans (Berenq.) Allesch. and P. mori (Lév.) Sacc.: Mycosphaerella mori
(Phoma longipes Bork. & Curt. (P. moricola Sacc.): Dendrophoma longipes.
Phymatotrichum omnivorum (Shear) Dug., root rot. Ariz., Okla, Texas.
Physalospora obtusa (Schw.) Cke., on branches. Eastern States.
Phytomonas mori (Boyer & Lambert) Bergey, bacterial spot, blight. General, including Pacific Coast; also in West Indies.
P. rhizogenes Riker et al., hairy root.
Polyporus farlowii Lloyd, heart rot. Ariz., N.Mex.
P. hispidus Bull. ex Fr., heart rot. Conn.
Rosellinia aquila (Fr.) DeNot., on dead branches, Ind.; root rot, West Indies.
Schizophyllum commune Fr., wood rot. Calif.
Sclerotinia sp. (? S. sclerotiorum (Lib.) DBy.), canker. Texas.
S. carunculoides Siegler & Jenkins, "popcorn" (berry-hardening) disease. N.Car. to Fla. and Texas.
(Septoria mori Lév.): Mycosphaerella mori.
Sphaeropsis sp. and S. sepulta Ell. & Ev., on branches. Conn., Kans., N.Y. (? conidial stage of Physalospora obtusa.)
Stereum cinqrascens (Schw.) Mass., wood rot.
Tryblidiella nigrocinnabarina (Schw.) Rohm and T. rufula Spreng.var. microspora Ell. & Ev., on branches. Ala.
Valsaria insitiva Cos. & DeNot., on branches. Md.
Leaf mottling - virus. P.R.

MORUS RUBRA L., RED MULBERRY. Deciduous tree of Growth Regions 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30.

Acrospermoides sublata Miller & Thompson, on leaves. Ga.
Cercospora moricola Cke., leaf spot. Ohio to Gulf States and Kans.
C. pulvinulata Sacc. & Wint., Mo., Kans., Nebr., Texas.
(Cercosporella arachnoidea Wolf): Mycosphaerella arachnoidea.
(C. maculans (Berenq.) Wolf): Mycosphaerella mori.
Dendrophoma longipes (Bork. & Curt.) Grove, on branches. S. Car.
Exosporium sp., leaf spot. Fla.
Fomes applanatus (Pers. ex Fr.) Gill., heart rot.
Heterodera marioni (Cornu) Goodey, root knot.
Hymenochaete agglutinans Ell.; heart rot. Md.
Massaria epiloua Bork. & Curt.; on branches. Ala.
M. olivacea Cke., Miss.
Mycosphaerella arachnoidea Wolf, false mildew. N.Car.
M. mori (Fckl.) Lindau, leaf spot. Pa. to Fla., Texas and W.Va.
(Phleospora maculans (Berenq.) Allesch.) : Mycosphaerella mori
P.moricola (Pass.) Sacc., leaf spot. Ind., Md., S.Car.
(cf. Mycosphaerella mori)

MORUS RUBRA--Continued

Phyllactinia corylea Pers. ex Karst., powdery mildew. Ohio.
Phyllosticta moricola Ell. & Ev., leaf spot. Kans., S.Car.
Polyporus gilvus (Schw.) Fr., wood rot. Ala.
Sclerotinia carunculoides Siegler & Jenkins, "popcorn diseases." Miss., N.Car.
Uncinula geniculata Gerard, powdery mildew. N.Y. to Ala. and Kans.

MUSA (MUSACEAE)

MUSA CAVENDISHII Lamb., DWARF BANANA. Native of China, grown for fruit and ornament especially in subtropical regions, including southern U.S., where common banana is not hardy.

Fusarium oxysporum Schl. var. cubense (EFS.) Wr., wilt. (This sp. is usually reported as resistant.)
Gloeosporium musarum Cke. & Mass., anthracnose. Fla.
Helminthosporium torulosum (Syd.) Ashby, black-tip of fruit. P.R.
Heterodera marioni (Cornu) Goodey, root knot. Fla.
Macrophoma musae (Cke.) Berl. & Vogl., freckle (fruit spot). T.H.
Phytomonas solanacearum (EFS.) Bergey, leaf blight. Fla.
Stachylidium theobromae Turc., "cigar-end" or tip rot of fruit. Canal Zone.

MUSA PARADISIACA L., PLANTAIN, and var. SAPIENTUM L., BANANA. Originally of India, now distributed throughout the tropics; cult. extensively in Cent.America and several of the West Indies, occasionally in S. Fla. to S. Calif.

(Cercospora musae Zimm.): Mycosphaerella musicola.
(C. musarum Ashby): Helminthosporium torulosum
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Cordana musae (Zimm.) Höhn. (Scolecotrichum musae Zimm.), leaf spot. P.R.
Diplodia theobromae (Pat.) Nowell, fruit rot, stem rot. Cosmopolitan in Tropics, occasionally on market fruit.
(Fusarium cubense EFS.): F. oxysporum var. cubense, F. lateritium Nees, and F. moniliforme Sheldon, var. subglutinans Wr., end rot of fruit, sometimes heart rot of leaves or stem. Occasional.
F. oxysporum Schl. var. cubense (EFS.) Wr., wilt, Panama disease. General in Central America and West Indies.
Gloeosporium musarum Cke. & Mass., spot or rot, usually of ripe but sometimes of green fruit, also leaf spot and stem rot, usually secondary; common on market fruit. General. Ascosporic strains belong to the following.

MUSA PARADISIACA--Continued.

Glomerella cingulata (Ston.) Spauld. & Schrenk., on fruit, leaves and stems. Occasional

Helminthosporium torulosum (Syd.) Ashby, black-tip (fruit), black spot (leaves). General.

Macrophoma musae (Cke.) Berl. & Vogl., freckle, black spot, fruit & leaves). T.H., West Indies. (There are numerous synonyms as Dothidea musae Klotzsch, Phoma musae (Cke.) Sacc., Phyllachora musae (Klotzsch) Sacc., Sphaeropsis musarum Cke.)

Marasmius semiustus Berk. & Curt. (M. stenophyllus Mont.), stem and root rot. T. H., West Indies

Mycosphaerella musae (Speg.) Syd., on leaves. P.R.
M. musicola Leach, (Cercospora musae Zimm.) Sigatoka disease, leaf spot, heart-leaf rot. West Indies, Central America.

(Nomatosporangium spp.) : Pythium

Omphalia flavida (Cke.) Maubl. & Rang., on leaves. P. R.

Pestalotia (Pestalozzia) leprogena Speg., leaf spot. P. R.

Phytomonas solanacearum (EFS.) Bergey, bacterial wilt, "Moko" disease. T. H., West Indies.

Pratylenchus musicola (Cobb) Filip., in roots. Calif.

Pythium spp., rootlet rot, stem rot. T.H., West Indies.
(The following species have been reported in Hawaii under the generic name Nematosporangium: N. arrhenomanes var. hawaiensis Sid., N. hyphalosticton Sid., N. polyandron Sid.)

Rhizoctonia? microsclerotia Matz, web blight. P.R.

Rotylenchus similis (Cobb) Filip., in roots. Calif.

Sclerotium rolfsii Sacc., leaf and stem rot. P.R.

(Scolecotrichum musae Zimm.): Cordana musae

Stachylidium theobromae Turc., "cigar-end" or dry tip rot of fruit. P.R.

Thielaviopsis paradoxa (de Seynes) Höhn., blackheaa (basal stem rot), stalk rot. General in Tropics.
(Conidial stage of Ceratostomella paradoxa Dade.)

Mosaic, Cucumis virus I (Doolittle) Smith. (Marmor cucumeris var. commelinae Holmes). Fla.
(Musa virus 3 (Magee) Smith is probably a synonym.)

(Division of Mycology and Disease Survey.)

FUSARIUM DIE-BACK OF AMERICAN HOLLY

Thomas R. Bender

(From the Nursery Disease Notes of the New Jersey Agricultural Experiment Station, Department of Plant Pathology, Vol. 13, no. 12, June and Vol. 14, no. 1, July, 1941).

The American holly (Ilex opaca Ait.) is one of the most prized specimens in many home landscapes. Few trees equal it in ornamental value, especially in late autumn and winter when its bright red berries stand out in brilliant contrast to its handsome dark evergreen foliage. It is relatively free of insect pests and fungous parasites. Most of the troubles experienced with it in ornamental plantings result from improper transplanting practices or unfavorable soil conditions.

During the past year this tree has been found to be subject to a heretofore undescribed fungous disease causing a die-back of the twigs and branches. The disease is seldom fatal, but it causes considerable disfigurement where preventive measures are not applied.

History of the disease.- In July, 1940, a severe case of branch and twig die-back of American holly, on a private estate at Spring Lake, New Jersey, was called to the attention of the author by a commercial arborist. The estate covers a complete city block two blocks from the ocean. It is bounded by a planting of large 15-to 20-year-old holly trees set in place in 1933 with a few very old native trees which were well established at the time the young hollies were moved in.

According to the estate superintendent, no case of holly die-back was observed prior to 1935. In that year, however, die-back appeared on one of the old native trees on the north side of the property. From this tree the disease seems to have spread to adjacent trees and at present can be noted in all sections of the estate. Not only did the disease spread from tree to tree as the years progressed, but individual trees also became more heavily infected.

A review of the literature failed to reveal any mention of the disease under investigation. Consequently, this constitutes the first report of a die-back of holly caused by Fusarium solani var. martii (App. & Wr.) Wr., the organism which has been found to be responsible for the disease.

Symptoms.-One of the first noticeable symptoms of the disease is the wilting of the current season's growth. Often, affected tips are completely defoliated, leaving curved, bare twigs which are quite noticeable even when observed from a distance. Wilting appears to be more abundant on terminal shoots at the top of the tree, although it has occasionally been observed in all parts of the plant.

Wilting first occurs in late May or early June when the terminal growth is from 8 to 10 inches long and the plants are in full bloom. Infection usually starts at the tip of the twig and progresses rapidly downward. Freshly killed twigs and leaves are black, resembling in general appearance twigs blighted by frost. The disease differs from frost injury in that it generally appears on a limited number of stems, usually at the top of the tree, whereas frost injury is more generally prevalent on young shoots, especially on those in the lower parts of the tree. In addition, frost damage is most often confined to the tips of the young growth whereas fusarium die-back usually extends at least to the base of the current year's growth and at times into the older branches.

A brown discoloration of the cortex and pith is visible when the affected twig is observed in longitudinal sections. A general breakdown of the cell structure in the pith region also occurs. The xylem cells appear as a light colored ring between the cortex and the pith. These cells compare favorably with xylem cells in healthy stems, and apparently are not attacked by the invading fungus. The brown cortical region becomes sunken to about half the thickness of normal cortex.

The most striking symptom of the disease, however, is the "flagging" of affected older branches. The browned leaves on the dead stems stand out in sharp contrast to the dark green foliage of nearby healthy limbs. These dead branches are more prevalent near the base but have been observed in all parts of the tree. "Flagged" branches may appear on the tree at any time during the growing season.

Close inspection of an infected two-or more-year-old branch reveals that the distal portion is dry and somewhat shrivelled. Yellowish-brown leaves still cling rather firmly to the twigs. On recently infected branches the limit of the canker is not readily discernible in the lower portion of the affected area, and can be detected only by peeling the bark. However, on stems that have been dead for some time, the junction of diseased and healthy tissue is sometimes clearly distinguishable by the sunken appearance of the diseased tissue.

A brownish-black discoloration of the cortical tissue is evident when the bark of the older stems is cut away in the infected area. This discolored area often extends longitudinally 5 to 6 inches, and in advanced cases of the disease, completely around the stem. A cross section examination under a microscope shows that the woody or xylem tissue is not discolored but quite normal in appearance. Xylem tissue plantings did not yield the fungus, thus indicating that these tissues do not become infected. Cortical tissue plantings made at the same time and under similar conditions, always yielded the causal organism.

Pathogenicity.- The pathogenicity of the fungus Fusarium solani var. martii on American holly stems has been repeatedly established during the course of the present investigations. The fungus was constantly isolated from stems showing the symptoms already described. Single spore cultures obtained from 2 of the earlier isolates were used

in all of the subsequent inoculations. Typical symptoms resulted when such cultures were inserted into wounded one-, 2- and 3-year stems and on unwounded young leaves of growing plants. Infection was also obtained on excised unwounded stem tips and young leaves in moist chambers. In a few cases, infection also occurred when spores were placed on unwounded, open blossoms.

Successful reisolation of a fungus similar to that used in the original inoculations was obtained in more than 50 separate tests.

The Causal Organism.- Because of the confused nomenclature and complex nature of the genus Fusarium, the author did not think it feasible to attempt to name the organism. Consequently a number of cultures obtained from a single spore isolation were submitted to Dr. Otto Reinking, head of the Division of Plant Pathology at the Agricultural Experiment Station, Geneva, New York who wrote that the fungus belongs to the section Martiella and that it appears to be Fusarium solani var. martii, but that a detailed study would be necessary in order to classify it definitely. For the present the causal fungus is tentatively placed in the group Fusarium solani (Mart.) App. & Wr. var. martii (App. & Wr.) Wr. (special pathogenic form).

Life History.- Apparently the vegetative stage of the fungus overwinters primarily in dead or diseased twigs and branches. The successful leaf infections obtained by artificial inoculations suggest that leaves may be an additional source of the overwintering fungus. However, no isolations of the fungus from overwintered leaves in nature were attempted.

A number of artificially infected stems were allowed to overwinter on plants in the greenhouse. Six months after inoculation, these stems were cut from the plant and placed in a moist chamber. Within 3 days, numerous clumps of conidiophores developed on the epidermis of the stems and fruited heavily. Microscopic examination of the fruiting structures showed that both microconidia and macroconidia were produced in abundance. Within one week, sporodochia were also visible. These consisted mainly of macroconidia.

Naturally infected 2-or 3-year-old branches were collected at Spring Lake in late winter of 1940 and early spring of 1941. The bark was removed from portions of these stems which were then placed in moisture chambers.

Numerous conidiophores developed on those portions from which the bark had been removed. Sporodochia in large numbers and few aerial conidiophores formed on those parts where the bark was left intact.

Infection Courts.-On the basis of results obtained in a large number of inoculation tests, it appears that the fungus is capable of entering the plant directly through very young leaves, through wounds in both young and old stems, and perhaps through the terminal portions of unwounded stems of the current year's growth. Successful infection of excised stems through artificially inoculated floral organs suggests that the fungus may also enter the plant through the blossoms. In as much as blossom blights on many other plants are known to be transmitted by insects, it is entirely possible that insects may also be important vectors in the transmission of this disease.

Control.- Preliminary control measures are now being conducted with a number of fungicidal sprays on a few affected trees on the estate at Spring Lake where the disease was first found.

The most important eradication practice is the complete removal and burning of all infected branches and fallen leaves. Such a practice will eliminate the greatest source of inoculum for sunsequent infections.

Detailed observations on a number of diseased limbs showed that many infections started near wounds made by lawn mowers, pruning tools, and breakage by winds. Consequently, the use of some antiseptic such as orange shellac on pruning cuts and other mechanical injuries, followed by a wound dressing should greatly reduce the chances of infection.

The valueof fungicidal sprays such as bordeaux and wettable sulfur can not be established definitely until additional data and time are available.

"X" DISEASE OF PEACH AND CHOKE-CHERRY FOUND IN MICHIGAN

Donald Cation

The yellow-red virosis of peach was found in Lapeer County on the eastern side of the state north of Detroit 2 3/4 miles west of Dryden, Michigan, by Mr. Ray Klackle, assistant County Agent. The grower had noted similar symptoms on a few peach trees in 1940.

A check up of the vicinity on August 1 showed about 17 peach trees infected out of 150 in the orchard. Diseased choke-cherries (Prunus virginiana) were found about 200 feet away. Some of the bushes were yellow and rosetted indicating that the infection was over 2 years old.

Another orchard 3 miles north showed 3 peach trees infected and a 2-year old infection on a clump of choke-cherries about 300 feet away. Other choke-cherries in the vicinity of this orchard in every direction were apparently healthy.

A rough survey of roadsides in a 6- to 10-mile radius showed infected clumps of choke-cherries approximately every 2 miles with intervening clumps appearing normal. Wild plum is very numerous along the roadsides in this vicinity. Further surveys of surrounding districts will be made later.

In 1939 Mr. C. A. Boyer found a single clump of red-leaved choke-cherries near Port Huron, Michigan, on his return from the "X" disease conference in New York. The writer also found a few red-leaved choke-cherries at both East Lansing and at Howell at the same time. The choke-cherries from Howell when budded into Elberta and Carman peach trees gave reactions the following spring (1940) similar to the reactions of the cherry yellow-leaf disease when budded into peach, causing a dieback of twigs and necrotic streaks down the bark of the limbs and trunk accompanied by delayed foliation but a later recovery of the limbs not already killed. In 1941 these trees appear normal with no indications of X-disease.

A survey of a 10-mile strip of road from New Hudson to Birmingham in August 1940 disclosed a few choke-cherries with red or yellow leaves. Buds from these off-type choke-cherries have not yet transmitted the "X" disease to peach or choke-cherry.

(Michigan State College)

ROSELLINIA ROOT ROT OF ALFALFA IN CALIFORNIA

M. R. Harris

During January, 1941, an alfalfa field near Banning, California, showed a few spots where the alfalfa plants had been killed out. The affected areas were generally circular and within the areas all of the plants had been killed. Specimens were sent to the pathology laboratory of the California State Department of Agriculture where it was determined that the fungus Rosellinia necatrix (Hartig) Berlese, commonly known as Dematophora, was causing the injury. An examination of the field showed that the fungus was not extensively established. It was apparently spread by cultivation from a single original infection. An effort was made to determine the possible source of the original infection but no clue was found. The fungus is not known to exist within 300 miles of this location.

Because the infection involved only a small area and because the Banning area is an important fruit growing section which could be severely damaged if the fungus became established in the orchards, an eradication project was started. The infested spots were treated with carbon bisulphide and the growing of alfalfa is to be discontinued. This is believed to be the first instance of this fungus on alfalfa within the continental United States.

(California State Department of Agriculture)

(NOTE: This is the only report in the Survey's records of occurrence on alfalfa in this country.)

POTATO LATE BLIGHT IN UPSTATE NEW YORK

M. F. Barrus

Late blight (Phytophthora infestans) was observed in 2 hill fields of potatoes in southern Allegany County on August 4. It was prevalent and destructive throughout these fields, indicating that it had been present for 2 weeks or more previous to the time it was observed. It had resulted in killing the tops of many vines and was spreading through the foliage. There has been more rain throughout July in the southern part of Allegany County than in the northern part or in counties farther north. This, doubtless, accounts for the infection taking place there.

Late blight was also reported as having been found in a field at Conquest, Cayuga County, on July 29. The appearance of blight in these 2 upstate localities should serve as a warning to all potato growers. Tubers affected with blight rot were undoubtedly planted in many fields. Conditions favorable to blight development will probably occur during the remainder of August and in September. It would not be surprising to find many other fields affected with late blight during this period. Careful attention to spraying or dusting is the only protection that can prevent a severe damage if this occurs.

(New York State College of Agriculture, Weekly News Letter, August 11).

SOME UNUSUAL OCCURRENCES OF PLANT DISEASES

HETERODERA SCHACHTII FOUND IN A LONG ISLAND POTATO FIELD: On July 3 a nematode which has since been identified as one of the Heterodera schachtii type by Dr. B. G. Chitwood was found causing considerable damage in a field of potatoes near Hicksville in Nassau County. A survey is now being conducted by Dr. Chitwood to determine how widespread this pathogen is. From information now available it appears that it has been causing reduced yields in that vicinity for the last few years. (Orson S. Cannon, Weekly News Letter (New York State College of Agriculture), August 4).

ACTIVE SPREAD OF PEACH YELLOWS IN NORTHERN VIRGINIA: Peach yellows (virus) has appeared in at least 6 commercial orchards in Northern Virginia this year, and appears to be actively spreading. Several trees exhibiting early symptoms have been found in 2 orchards in which trees in a more advanced stage were present; no such evident source of inoculum was observed in the other plantings, one only 3 years old. One comparatively isolated orchard has not had a case of yellows in 11 years.

There may be nothing in the situation to cause alarm, but certainly the possibility of a major outbreak can not be dismissed. A survey is in progress to better ascertain the extent of the present outbreak. (A. B. Groves, August 15, Virginia Agricultural Experiment Station)

UNUSUAL OCCURRENCE OF SCAB ON PRUNES IN CALIFORNIA: During July, 1941, several prune trees south of Santa Rosa, California, showed a peculiar spotting of the fruit which was new to the growers of that section of the State. Upon examination of the fruits it was found that a fungus which appears to be quite similar to Cladosporium carpophilum Thuem. was the cause of the spotting. A closer examination of the trees showed that where severe infection of the fruit occurred only a few lesions were found on the leaves and twigs. Leaf lesions fell out later leaving a shot-hole effect. On the trees the bulk of the diseased fruits were found on the lower innermost branches. On the fruit fully exposed to the sun on the outer twigs little or no infection was found. The appearance of the disease in this area and its distribution on the trees suggests that rainfall of the past winter and spring, which was the heaviest on record in many places, favored its development. The amount of damage done will be very small. (M. R. Harris, California State Department of Agriculture.)

VASCULAR WILT OF THE MIMOSA TREE IN EASTERN VIRGINIA: The sudden death of a mimosa tree (Albizzia julibrissin) in Fox Hall near Norfolk, Virginia was apparently caused by the vascular wilt disease (Fusarium perniciosum Hepting). The sudden wilting, loss of the leaves, and finally death of the tree, agree with the description of the disease. A Fusarium was consistently isolated from the discolored wood of the end branches. This tree is located in a section where many mimosa trees are grown and may prove to be the beginning of the end of the mimosa in this locality. (T. J. Nugent, Virginia Truck Experiment Station, Norfolk).

JULY WEATHER

(From U. S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for the week ending August 5, 1941).

The weather of July was characterized by mostly moderate temperatures for the season, although the latter part of the period, especially the last week of the month, was abnormally warm in all central and northern States east of the Rocky Mountains. For the month, as a whole, the temperature averaged near normal in the southern half of the country and from 2° to 5° above normal in the northern half, except the extreme Northeast was near normal and the far Northwest had plus departures of 4° to 8°.

For the southern half of the country, the mean monthly temperatures were 1° to 2° above normal east of the Mississippi River, practically normal in the trans-Mississippi States, 1° to 2° below normal in southern

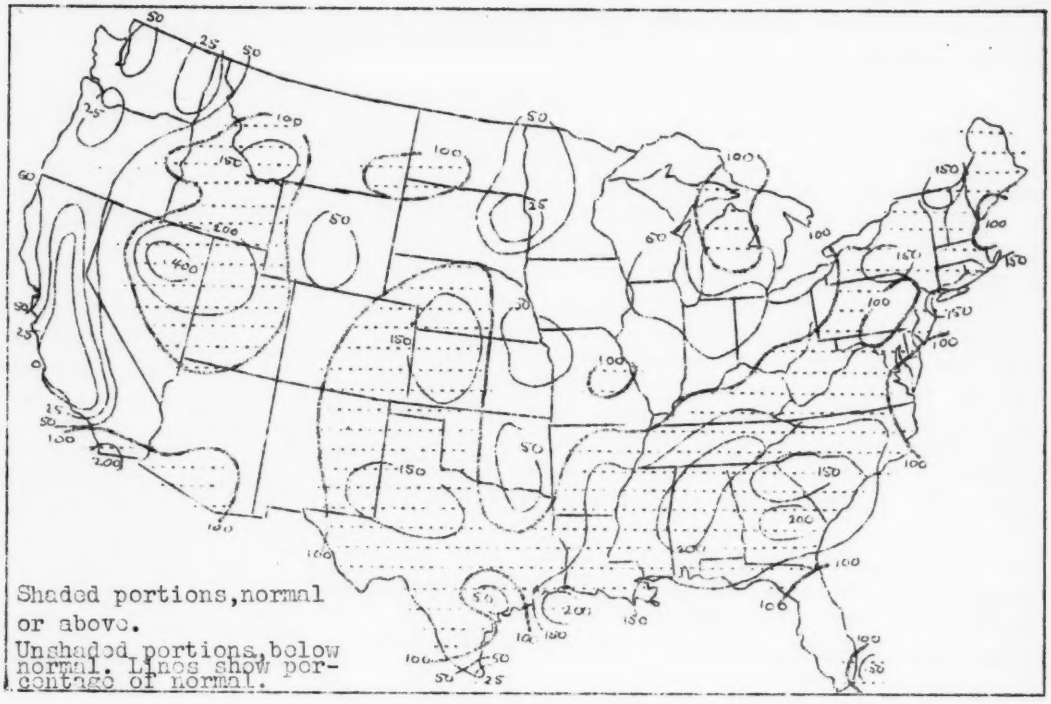

Figure 1.-Percentage of Normal Precipitation for July 1941

Rocky Mountain sections, and slightly above normal in the far Southwest. For the northern half, the means were mostly 2° to 4° above normal from western New York to the upper Mississippi Valley, with plus anomalies somewhat greater to the westward.

Fig. 1 shows the geographic distribution of precipitation for July, based on first-order stations only. It indicates broadly that rainfall was above normal in most sections from the Appalachian Mountains eastward, in the South, the western Great Plains, and the Great Basin of the West. On the other hand, the amounts were scanty in the southern Lake region, the northern Ohio Valley, central and upper Mississippi Valley, the eastern Plains, and the Pacific Northwest. Very little rain, of course, was expected in California.

As usual, some marked differences are shown for contiguous localities, a few of the outstanding being: 195 percent of normal at North Platte, Nebr., and 16 percent at Lincoln; 148 at Dodge City, Kans., and 32 at Topeka; 138 at Columbia, Mo., and 57 at St.Louis; 200 at Helena, Mont., and 59 at Havre; and 147 at Corpus Christi, Tex., and 2 percent of normal at Brownsville.